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EXAMINER

ROBINSON BOYCE, AKIBA K

ART UNIT	PAPER NUMBER
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3623

DATE MAILED: 09/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/464,311

Applicant(s)

CHEN ET AL.

Examiner

Akiba K Robinson-Boyce

Art Unit

3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Status of the Claims***

In response to the communication received on 6/13/02, the following is a final office action. Claims 1-20 remain pending in this application and have been examined on the merits. No new matter has been added to the claims and therefore the rejection is a repeated rejection that was already given in paper #6.

### ***Oath/Declaration***

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:  
Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 6, 11, are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson, et al (US Patent 5,974,396), and further in view of Geerlings (US Patent 5,956,693).

As per claims 1, 6, 11, Anderson, et al discloses:

Processing circuitry operative to process customer records...(Col. 25, lines 6-8, lines 14-16);

A data warehouse...(Col. 25, lines 52-53);

A profiling engine communicating with the data warehouse...(Col. 25, line 63-Col. 26, line 4);

At least one computer program, performed by the profiling engine, and operative to define behavior profiles as data cubes.../a computer application program implemented on the profiling engine.../and operative to define behavior profiles as patterns.../wherein one multi-level data cube comprises a profile cube.../wherein yet another data cube comprises an updated profile cube... (Col. 25, lines 34-36, Col. 26, lines 12-14, Col. 27, lines 14-15);

Anderson, et al fails to teach the following, however Geerlings discloses:

And derive similarity measures on patterns extracted from the behavior profiles.../wherein similarity measures are defined and computed on the patterns extracted from the behavior profiles.../ Wherein another multi-level data cube comprises a profile-snapshot cube...(Abstract, lines 2-4, lines 8-17).

It would have been obvious to one of ordinary skill in the art to derive similarity measures on patterns extracted from the behavior profiles which were already defined

with the motivation of further filtering the chosen group which demonstrated a certain behavior in order to focus more on a specific behavior pattern.

Both Anderson, et al and Geerlings fail to disclose:

Merging together the profile cube and the profile-snapshot cube...

Official notice is taken that it is old and well known in the customer profiling art to merge together the profile cube and the profile-snapshot cube. It would have been obvious to one of ordinary skill in the art to merge together the profile cube and the profile-snapshot cube with the motivation of focusing more on a specific behavior pattern. In addition, the snapshot of a profile is the same as a profile since it is just a portion of the profile. It would therefore make sense to merge together the profile cube and the profile-snapshot cube since they contain the same information.

As per claim 5, Anderson, et al discloses:

Wherein the behavior profiles are defined at least in part by probability distributions...(Col. 6, lines 36-43, where the examiner is interpreting the probability to be analogous to the statistical data since probability data is statistical).

Claims 2-4, 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson, et al (US Patent 5,974,396), and further in view of Geerlings (US Patent 5,956,693), and further in view of Papierniak, et al (US Patent 6,128,624).

As per claim 12, Anderson, et al discloses:

Wherein the profiling engine is configured to define customer behavior profiles using probability...(Col. 6, lines 36-43, where the examiner is interpreting the probability to be analogous to the statistical data since probability data is statistical).

As per claims 2, 12, both Anderson, et al and Geerlings fail to teach the following, however Papierniak, et al discloses:

Wherein the profiling engine is an OnLine Analytical Processing...(Col. 18, lines 16-18).

It would have been obvious to one of ordinary skill in the art for the profiling engine to be an OnLine Analytical Processing based profiling engine because this type of tool is the most appropriate for the handling and processing of metadata. This tool is commonly used for a more organized approach for handling masses of data.

As per claims 3, 4, Anderson, et al fails to disclose the following, however Geerlings discloses:

Wherein the profiling engine comprises a commercial data warehouse...(Col. 3, lines 45-46);

Both Anderson, et al and Geerlings fail to teach the following, however Papierniak, et al discloses:

And a multi-dimensional OLAP server.../wherein the profiling engine implements multi-level... (Col. 18, lines 6-18).

It would have been obvious to one of ordinary skill in the art to have both a commercial data warehouse server and a Multi-dimensional OLAP and wherein the profiling engine

implements multi-level, multi-dimensional pattern analysis and comparison with the motivation of providing the right tools for processing and handling the metadata.

As per claims 13, 15, Anderson discloses:

...wherein one multi-level data cube comprises a profile cube.../wherein yet another data cube comprises an updated profile cube... (Col. 25, lines 34-36, Col. 26, lines 12-14, Col. 27, lines 14-15).

Anderson, et al, Geerlings and Papierniak, et al all fail to disclose:

Merging together the profile cube and the profile-snapshot cube...

Official notice is taken that it is old and well known in the customer profiling art to merge together the profile cube and the profile-snapshot cube. It would have been obvious to one of ordinary skill in the art to merge together the profile cube and the profile-snapshot cube with the motivation of focusing more on a specific behavior pattern. In addition, the snapshot of a profile is the same as a profile since it is just a portion of the profile. It would therefore make sense to merge together the profile cube and the profile-snapshot cube since they contain the same information.

As per claim 14, Anderson, et al fails to teach the following, however Geerlings discloses:

Wherein another multi-level data cube comprises a profile-snapshot cube...(Abstract, lines 2-4, lines 8-17).

It would have been obvious to one of ordinary skill in the art for another multi-level data cube to comprise a profile-snapshot cube with the motivation of further filtering the

chosen group which demonstrated a certain behavior in order to focus more on a specific behavior pattern.

As per claim 16, Anderson, et al discloses:

Wherein the updated profile cube is stored within a profile table of the data warehouse...(Col. 25, line 63-Col. 26, line 4, Col. 25, lines 34-36, col. 26, lines 12-14, Col. 27, lines 14-15).

As per claim 17, Anderson, et al discloses:

Providing call data in the form of call data records...(Col. 25, lines 52-53);

In combination with generating the profile-snapshot cube, generating a profile cube...(Col. 25, lines 34-36, Col. 26, lines 12-14, Col. 27, lines 14-15).

Updating the profile cube...(Col. 25, line 63-Col. 26, line 4);

Storing the updated profile cube...(Col. 25, lines 52-53);

Both Anderson, et al and Geerlings fail to disclose the following, however Papierniak, et al discloses:

Loading the call data records into an OLAP server...(Col. 18, lines 16-18)

It would have been obvious to one of ordinary skill in the art to load the call data records into an OLAP server with the motivation of providing the right tools for processing and handling the metadata.

Generating a profile-snapshot...(Abstract, lines 2-4, lines 8-17).

It would have been obvious to one of ordinary skill in the art to generate a profile-snapshot with the motivation of further filtering the chosen group which demonstrated a certain behavior in order to focus more on a specific behavior pattern.



Anderson, et al, Geerlings and Papierniak, et al all fail to disclose:

merging the profile cube with the profile-snapshot...

Official notice is taken that it is old and well known in the customer profiling art to merge together the profile cube and the profile-snapshot cube. It would have been obvious to one of ordinary skill in the art to merge together the profile cube and the profile-snapshot cube with the motivation of focusing more on a specific behavior pattern. In addition, the snapshot of a profile is the same as a profile since it is just a portion of the profile. It would therefore make sense to merge together the profile cube and the profile-snapshot cube since they contain the same information.

As per claim 18, Anderson, et al discloses:

Wherein the data warehouse comprises profile tables...(Col. 10, lines 31-44).

As per claim 19, Anderson, et al discloses:

Wherein the updated profile cube is subdivided into a plurality of individual calling pattern cubes...(Col. 25, lines 34-36, Col. 26, lines 12-14, Col. 27, lines 14-15).

As per claim 20, Anderson, et al discloses:

Further comprising the step of performing at least one of reporting...(Col. 25, lines 37-42).

Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson, et al (US Patent 5,974,396), and further in view of Geerlings (US Patent 5,956,693), and further in view of Lotvin, et al (US Patent 5,907,831).

As per claims 7, 9, both Anderson, et al and Geerlings fail to disclose the following, however, Lotvin, et al discloses:

Wherein the computer program is further operative to compare thee data cubes...so as to extract fraud detection form the behavior profiles.../wherein the behavior profiles are analyzed to detect caller fraud...(Col. 18, lines 7-14).

It would have been obvious to one of ordinary skill in the art to extract fraud detection from the behavior profiles with the motivation of detecting whether or not the detected behavior is truly valid and therefore resulting in accurate results.

As per claim 8, both Anderson, et al and Geerlings fail to disclose the following, however, Lotvin, et al discloses:

Wherein the customer records comprise customer communication call records, and the behavior profiles are derived from telephone call...(Col. 19, lines 10-19).

It would have been obvious to one of ordinary skill in the art for the customer records to comprise customer communication call records, and the behavior profiles to be derived from telephone call data with the motivation of incorporating commonly utilized communication networks such as telephone networks, thereby determining the behavioral patterns in this type of environment.

As per claim 10, Anderson, et al discloses:

The profiling engine builds and updates customer...behavior profiles by mining the customer...records...(Col. 25, line 63-Col. 26, line 4);

Both Anderson, et al and Lotvin, et al. fail to disclose, however Geerlings discloses:

derives similarity measures on patterns.....(Abstract, lines 2-4, lines 8-17).

It would have been obvious to one of ordinary skill in the art to derive similarity measures on patterns extracted from the behavior profiles which were already defined with the motivation of further filtering the chosen group which demonstrated a certain behavior in order to focus more on a specific behavior pattern.

Both Anderson, et al and Geerlings fail to disclose, however Lotvin, et al. discloses:

Customer records comprise customer call records...(Col. 19, lines 10-19).

It would have been obvious to one of ordinary skill in the art for the customer records to comprise customer call records with the motivation of incorporating commonly utilized communication networks such as telephone networks, thereby determining the behavioral patterns in this type of environment.

### ***Response to Arguments***

Applicant's arguments filed 6/13/02 have been fully considered but they are not persuasive.

The new declaration submitted cured the deficiencies discussed in the rejection of paper #3 about the missing Post Office address of each inventor, however the new declaration has non-initialed alterations. Any alterations made by the inventor on the declaration must be initialed and dated by the inventor.

As per claim 1, the applicant argues that Anderson et al fails to disclose a computer program performed by a profile engine and operative to define behavior

profiles. Applicant also argues that both Anderson et al and Geerlings fail to teach "similarity measures" or "data cubes" or derives similarity measures or patterns extracted for behavior profiles. However, in Anderson et al, a consumer profile is defined as "the interface to the database containing the consumer demographic and psychographic information aggregated in the Consumer applications subsystem" in Col. 23, lines 7-12. This passage proves that demographic/psychographic information can be extracted from the Consumer Profile through use of database commands and therefore Anderson et al's Consumer Profile is a behavior profile since it consists of demographic/psychographic information about the consumer. Anderson et al teaches that the consumer information describing consumer demographics is grouped into consumer clusters in Col. 3, lines 8-11 and that consumer household buying behavior is based on consumer cluster definitions in the abstract, lines 7-9 and in Col. 14, lines 18-23 where the consumer cluster definitions are analogous to the data cubes or similarity measures since the clusters are based on similarly grouped consumers. Anderson et al also teaches that his invention is carried out by using electronic data processing circuitry in Col. 30, lines 25-56. In order to implement electronic processing, it is necessary to have a computer program which gives instructions to carry out the processing procedures. In addition, Anderson discloses the profile engine in Col. 28, lines 41-50 where he discloses "means for grouping said consumer identifying data into M different consumer clusters...". Anderson et al also discloses a behavior profile by introducing the consumer profile since as discussed above the consumer information describing consumer demographics is grouped into consumer clusters and that

Art Unit: 3623

consumer household buying behavior is based on consumer cluster definitions. In further addition, Geerlings discloses that various modeling analysis are available which look at profiles or groupings of types of people to predict the behavior of a customer group in Col. 1, lines 32-35. Also, in Col. 4, lines 65-67 with Col. 3, lines 22-28, it is taught that a target customer profile is identified in order to begin the process of segmenting or grouping like customers based on behavioral patterns. Also in Geerlings, the similarity measures or patterns are shown in Col. 3, lines 23-29 where the similarity measures are analogous to the segments/groups and the profiles are analogous to the marketing database (see Col. 4, lines 20-24, lines 26-28 and lines 65-67). In Geerlings, behavior profiles are analogous to data cubes because the consumer profile deals with data which flows into a database and this data consists of consumer demographic information which are stored in a database. These profiles must therefore contain data. In conclusion, the combination of the Anderson et al patent and the Geerlings patent teaches the limitations of claim 1.

As per claims 5 and 6, these claims depend on claim 1 and are rejected for the same reasons listed above with respect to claim 1.

As per claims 2-4 and 7-10, these claims depend on claim 1 and are rejected for the same reasons listed above with respect to claim 1.

In addition, as per claims 2-4, the applicant argues that Papierniak et al fails to cure the deficiencies of Anderson et al or Geerlings since Papierniak fails to teach a computer program performed by a profiling engine and operative to define behavior profiles as data cubes and derive similarity measures. However as described above

with respect to claim 1, the combination of Anderson et al and Geerlings discloses a computer program performed by a profiling engine and operative to define behavior profiles as data cubes and derive similarity measures. In addition the abstract, lines 11-15 of Papierniak et al discloses that behavior patterns is one of the classifications included in the design database. Papierniak et al also discloses the determination of which web-access resources are most frequently utilized through the behavioral patterns of a customer. Since these patterns are included in the database, this means that different behavior patterns can be represented as data cubes, therefore the Papierniak reference is combinable with Anderson et al and Geerlings and the combination of all three references disclose the limitations of claims 2-4.

As per claims 7-10, the applicant argues that Lotvin et al fails to cure the deficiencies of Anderson et al or Geerlings since Lotvin fails to teach a computer program performed by a profiling engine and operative to define behavior profiles as data cubes and derive similarity measures. However as described above with respect to claim 1, the combination of Anderson et al and Geerlings discloses a computer program performed by a profiling engine and operative to define behavior profiles as data cubes and derive similarity measures. In addition, the Lotvin et al reference discloses a system which implements an incentive program which at one point does monitor user behavior while detecting user usage patterns and purchases (See Col. 18, lines 7-14). Therefore, the Lotvin et al reference is combinable with Anderson et al and Geerlings and the combination of all three references disclose the limitations of claims 7-10.

As per claim 11, the applicant argues that Anderson et al fails to teach or suggest a computer application program implemented on the profiling engine and operative to represent behavior profiles as patterns and derive similarity measures of the patterns usable to profile customer behavior. As discussed with regard to claim 1, Anderson et al discloses a consumer profile is defined as "the interface to the database containing the consumer demographic and psychographic information aggregated in the Consumer applications subsystem" in Col. 23, lines 7-12. This passage proves that demographic/psychographic information can be extracted from the Consumer Profile through use of database commands and therefore Anderson et al's Consumer Profile is a behavior profile since it consists of demographic/psychographic information about the consumer. Anderson et al teaches that the consumer information describing consumer demographics is grouped into consumer clusters in Col. 3, lines 8-11 and that consumer household buying behavior is based on consumer cluster definitions in the abstract, lines 7-9 and in Col. 14, lines 18-23 where the consumer cluster definitions are analogous to the data cubes or similarity measures since the clusters are based on similarly grouped consumers. Anderson et al also teaches that his invention is carried out by using electronic data processing circuitry in Col. 30, lines 25-56. In order to implement electronic processing, it is necessary to have a computer program which gives instructions to carry out the processing procedures. In addition, Anderson discloses the profile engine in Col. 28, lines 41-50 where he discloses "means for grouping said consumer identifying data into M different consumer clusters...". Anderson et al also discloses a behavior profile by introducing the consumer profile

since as discussed above the consumer information describing consumer demographics is grouped into consumer clusters and that consumer household buying behavior is based on consumer cluster definitions.

As per claims 12-16, these claims depend on claim 11 and are therefore rejected for the same reasons as discussed with regard to claim 11.

As per claim 17, the applicant argues that Anderson et al, Geerlings and Papierniak et al fail to disclose a profile snapshot cube with accommodates multiple customers. However in Anderson et al, consumer information describing consumer demographics is grouped into consumer clusters in Col. 3, lines 8-11 and that consumer household buying behavior is based on consumer cluster definitions in the abstract, lines 7-9 and in Col. 14, lines 18-23 where the consumer cluster definitions are analogous to the data cubes or similarity measures since the clusters are based on similarly grouped consumers. In Geerlings, various modeling analysis are available which look at profiles or groupings of types of people to predict the behavior of a customer group in Col. 1, lines 32-35. The Papierniak et al patent was combined with the Anderson et al and Geerlings references since Papierniak et al discloses that behavior patterns is one of the classifications included in the design database in the abstract, lines 11-15. Papierniak et al also discloses the determination of which web-access resources are most frequently utilized through the behavioral patterns of a customer. Since these patterns are included in the database, this means that different behavior patterns can be represented as data cubes, therefore the Papierniak reference is combinable with Anderson et al and Geerlings and it is the combination of



Papierniak et al with the Anderson et al and Geerlings reference that disclose the limitation of "a profile snapshot cube with accommodates multiple customers".

As per claims 18-20, these claims depend on claim 17 and are therefore rejected for the same reasons as discussed with regard to claim 17.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akiba K Robinson-Boyce whose telephone number is 703-305-1340. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 703-305-9643. The fax phone numbers for

Art Unit: 3623

the organization where this application or proceeding is assigned are 703-746-7238

[After final communications, labeled "Box AF"], 703-746-7239 [Official Communications], and 703-746-7150 [Informal/Draft Communications, labeled "PROPOSED" or "DRAFT"].

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



A. R. B.

September 6, 2002



TARIQ R. HARIZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600